Journal of Fermentation and Bioengineering

VOLUME 73 · 1992

THE SOCIETY OF FERMENTATION TECHNOLOGY, JAPAN

JOURNAL OF FERMENTATION AND BIOENGINEERING

Chairman: Shiro Nagai

Executive Editor: Tadayuki Imanaka Henry Y. Wang

Editorial Board:

Teruo Amachi	Satoshi Harashima	Shinji Iijima
Hiroshi Imanaka	Shigeo Katoh	Katsuhiko Kitamoto
Takeshi Kobayashi	Tohru Kodama	Yoshikatsu Murooka
Sakayu Shimizu	Suteaki Shioya	Makoto Shoda
Atsuo Tanaka	Hideo Tanaka	Kiyoshi Toda

Advisory Board:

Shuichi Aiba	Ichiro Chibata	Charles L. Cooney
Hanswerner Dellweg	Arnold L. Demain	Saburo Fukui
Carl G. Heden	Arthur E. Humphrey	Ralf Hütter
Kazuo Komagata	Maria-Regina Kula	Yoshio Nakao
Hirosuke Okada	S. John Pirt	Peter L. Rogers
Dewey D.Y. Ryu	Shiro Seno	Shoichi Shimizu
Joji Takahashi	Tatsurokuro Tochikura	

THE SOCIETY OF FERMENTATION TECHNOLOGY, JAPAN

% Faculty of Engineering, Osaka University,
2–1 Yamadaoka, Suita-shi,
Osaka 565, Japan

Journal of Fermentation and Bioengineering

CONTENTS
VOLUME 73 • 1992

ORIGINALS

Classification of Ethylene-Producing Bacteria in Terms of Biosynthetic Pathways to Ethylene. Kazuhiro Nagahama, Takahiro Ogawa, Takao Fujii, and Hideo Fukuda 1- 5

An Improved Assay Method for a Pseudomurein-Degrading Enzyme of *Methanobacterium wolfei* and the Protoplast Formation of *Methanobacterium thermoautotrophicum* by the Enzyme. Hiroyuki Morii and Yosuke Koga 6- 10

Intracellular Na^+ and K^+ Contents of *Zygosaccharomyces rouxii* Mutants Defective in Salt Tolerance. Kohei Ushio, Harumi Ohtsuka, and Yoshiyuki Nanata 11- 15

Continuous Ethanol Production from Sugar Beet Molasses Using an Osmotolerant Mutant Strain of *Zymomonas mobilis*. Soon Chul Park and Jacques C. Baratti 16- 21

Development of Dual On-Line Analyzer and Its Application to Fed-Batch Lactic Acid Fermentation. Zhongping Shi, Kazuyuki Shimizu, Shinji Iijima, Rokuro Izumi, Kunio Matsumoto, and Takeshi Kobayashi 22- 25

Measurement, Control, and Modeling of Submerged Acetic Acid Fermentation. Dariusch Hekmat and Dieter Vortmeyer 26- 30

Production and Release of Pigments by Culture of Transformed Hairy Root of Red Beet. Masahito Taya, Koji Mine, Masahiro Kino-oka, Setsuji Tone, and Takahito Ichi 31- 36

Immobilization of Nitrifying Bacteria by Polyethylene Glycol Prepolymer. Tatsuo Sumino, Hiroki Nakamura, Naomichi Mori, and Yukio Kawaguchi 37- 42

Effects of C/N Ratio on Thermophilic Composting of Garbage. Kiyohiko Nakasaki, Hideki Yaguchi, Yasushi Sasaki, and Hiroshi Kubota 43- 45

Enhanced Removal Efficiency of Malodorous Gases in a Pilot-Scale Peat Biofilter Inoculated with *Thiobacillus thioparus* DW44. Kyeoung-Suk Cho, Mitsuyo Hirai, and Makoto Shoda 46- 50

Structure of a β-Glucosidase Gene from *Ruminococcus albus* and Properties of the Translated Product. Masayuki Takano, Ryuichi Moriyama, and Kunio Ohmiya 79- 88

Expression of Cytochrome *c*-553 (CO) Gene That Complements the Second Subunit Deficiency of Membrane-Bound Alcohol Dehydrogenase in *Gluconobacter suboxydans* subsp. α. Yasuhiko Takeda and Toshio Shimizu 89- 93

Characterization of Microbial System for Degradation of Bacterial Endospores. Yoshimasa Yonemoto, Hisako Yamaguchi, Kenichi Okayama, Akira Kimura, and Kousaku Murata 94- 98

Isolation and Characterization of *N*-Acetyldehydroleucine Acylase, an New Enzyme from *Zoogloea ramigera*. Matthias Kittelmann and Maria-Regina Kula 99-107

A Novel Raw-Starch-Digesting Yeast α-Amylase from *Lipomyces starkeyi* HN-606. Boontiam Punpeng, Yoshihiko Nakata, Masatoshi Goto, Yuji Teramoto, and Shinsaku Hayashida 108-111

Efficient Production of Thermostable *Clostridium thermosulfurogenes* β-Amylase by *Bacillus brevis*. Makoto Mizukami, Hideo Yamagata, Kenji Sakaguchi, and Shigezo Udaka 112-115

Continuous Production of *S*-Lactoylglutathione by Immobilized Glyoxalase I from *Hansenula mrakii*. Yoshiharu Inoue, Hiromi Tsuchiyama, Linh-Thuoc Tran, Nobuhiko Kosugi, and Akira Kimura 116–120

Bioconversion of Pimelic Acid into Biotin by *Bacillus sphaericus bioB* Transformants. Ikuroh Ohsawa, Tsugio Kisou, Kazuko Kodama, Ikuhiro Yoneda, Denis Speck, Rémi Gloeckler, Yves Lemoine, and Kouichi Kamogawa 121–124

Efficient Conversion of Dinitrile to Mononitrile-Monocarboxylic Acid by *Corynebacterium* sp. C5 Cells during Tranexamic Acid Synthesis. Keizou Yamamoto, Yuji Ueno, Kazumasa Otsubo, Hiroyuki Yamane, Ken-ichi Komatsu, and Yoshiki Tani... 125–129

Turbidimetric Measurement of Cell Biomass of Plant Cell Suspensions. Hideo Tanaka, Hideki Aoyagi, and Tetsuya Jitsufuchi 130–134

Quantitative Determination of Methanogenic Cells Based on Analysis of Ether-Linked Glycerolipids by High-Performance Liquid Chromatography. Kazuhiro Demizu, Sadami Ohtsubo, Shuhei Kohno, Isao Miura, Masateru Nishihara, and Yosuke Koga 135–139

Partitioning and Separation of α-Lactalbumin and β-Lactoglobulin in PEG/Potassium Phosphate Aqueous Two-Phase Systems. Jyh-Ping Chen 140–147

Growth and Fermentation Characteristics of Bottom Brewer's Yeast under Mechanical Stirring. Mitsuyasu Okabe, Miwa Katoh, Fumihiko Furugoori, Masashi Yoshida, and Shunsuke Mitsui 148–152

Analysis of the State Characteristics of Sake Brewing with a Neural Network. Kaoru Oishi, Mitsunori Tominaga, Akitsugu Kawato, and Satoshi Imayasu 153–158

Growth Kinetics of Hybridoma Cells in High Density Culture. Yoshihito Shirai, Kenji Hashimoto, and Hiroyuki Takamatsu 159–165

Cloning of the Sucrose Phosphorylase Gene from *Leuconostoc mesenteroides* and Its Overexpression Using a 'Sleeper' Bacteriophage Vector. Satoshi Kitao and Eiichi Nakano 179–184

Comparative Characterization of New Glutaryl 7-ACA and Cephalosporin C Acylases. Ichiro Aramori, Masao Fukagawa, Mana Tsumura, Morita Iwami, Hiroki Ono, Yosuke Ishitani, Hitoshi Kojo, Masanobu Kohsaka, Yoshio Ueda, and Hiroshi Imanaka..... 185–192

Lactic Acid Bacteria in a Fermented Fishery Product, "Burong Bangus". Minerva Olympia, Hisayo Ono, Atsuhiko Shinmyo, and Mitsuo Takano 193–197

Continuous Production of Panose by Immobilized Neopullulanase. Takashi Kuriki, Manabu Tsuda, and Tadayuki Imanaka 198–202

A Pilot Process of Solid State Fermentation from Sugar Beet Pulp for the Production of Microbial Protein. Maojie Xue, Deming Liu, Hongxun Zhang, Hongyan Qi, and Zhifang Lei 203–205

Batch and Continuous Anaerobic Toxicity of Resin Acids from Chemithermomechanical Pulp Wastewater. Kevin J. Kennedy, Peter J. McCarthy, and Ronald L. Droste... 206–212

Degradation of Benzoate by an Anaerobic Consortium and Some Properties of a Hydrogenotrophic Methanogen and Sulfate-Reducing Bacterium in the Consortium. Yoichi Kamagata, Nobuhisa Kitagawa, Masaharu Tasaki, Kazunori Nakamura, and Eiichi Mikami 213–218

Enhanced Removability of Odorous Sulfur-Containing Gases by Mixed Cultures of Purified Bacteria from Peat Biofilters. Kyeoung-Suk Cho, Mitsuyo Hirai, and Makoto Shoda 219–224

The Orotidine-5′-Phosphate Decarboxylase Gene (*URA3*) of a Methylotrophic Yeast, *Candida boidinii*: Nucleotide Sequence and Its Expression in *Escherichia coli*. Yasuyoshi Sakai, Takumi Kazarimoto, and Yoshiki Tani 255–260

High-Efficiency Transformation of *Bacillus subtilis* NB22, an Antifungal Antibiotic Iturin Producer, by Electroporation. Yuko Matsuno, Takashi Ano, and Makoto Shoda ... 261-264

Partial Restoration of Sporulation Defect in Sake Yeasts, Kyokai No. 7 and No. 9, by Increased Dosage of the *IME1* Gene. Nobushige Nakazawa, Toshihiko Ashikari, Naoko Goto, Teruo Amachi, Ryoichi Nakajima, Satoshi Harashima, and Yasuji Oshima ... 265-270

Purification and Characterization of Glyoxalase II from *Hansenula mrakii*. Yoshiharu Inoue and Akira Kimura ... 271-276

Isolation and Characterization of a Bacterial Dipeptidyl Carboxypeptidase Inhibitor from *Bacillus subtilis* 3-16-20. Yoichi Nagamori, Kaname Kusaka, Takahisa Nishimura, and Shigetaka Okada ... 277-279

Lipase-Catalyzed Kinetic Resolution of 2,3-Epoxy-8-Methyl-1-Nonanol, the Key Intermediate in the Synthesis of the Gypsy Moth Pheromone. Eiichiro Fukusaki, Shuji Senda, Yutaka Nakazono, Hiroyuki Yuasa, and Tetsuo Omata ... 280-283

Large-Scale Preparation of (+)-Disparlure, the Gypsy Moth Pheromone, by a Practical Chemico-Enzymatic Procedure. Eiichiro Fukusaki, Shuji Senda, Yutaka Nakazono, Hiroyuki Yuasa, and Tetsuo Omata ... 284-286

Pyruvate Production by *Enterococcus casseliflavus* A-12 from Gluconate in an Alkaline Medium. Hideshi Yanase, Nobuhiro Mori, Muneto Masuda, Keiko Kita, Masayuki Shimao, and Nobuo Kato ... 287-291

Preferential and High-Yield Production of a Cephamycin C by Dissolved Oxygen Controlled Fermentation. Mitsuyasu Okabe, Takeshi Kuwajima, Michikatsu Satoh, Kiyoshi Kimura, Kazuhiko Okamura, and Rokuro Okamoto ... 292-296

Effect of Ventilation on the Production of Acetaldehyde by *Zymomonas mobilis*. Hidenori Ishikawa and Hideo Tanaka ... 297-302

Anaerobic Digestion Using a Fixed-Bed Reactor with Bacteria Immobilized by Polyacrylate on a Saddle-Shaped Slag Support. Min Yang, Masaya Yoshimura, Mitsumasa Okada, Shiro Nagai, and Hiroshi Sunahara ... 303-307

Requirement in *trans* of the Downstream *limL* Gene for Activation of Lactonizing Lipase from *Pseudomonas* sp. 109. Fumio Ihara, Iwao Okamoto, Takuya Nihira, and Yasuhiro Yamada ... 337-342

Purification and Properties of Malic Enzyme from *Pseudomonas diminuta* IFO-13182. Shin-ichiro Suye, Yasuhiro Okada, Ario Funada, Mikio Kawagoe, and Shusei Inuta ... 343-347

Purification of RuBisCO from the Thermophilic Cyanobacterium *Synechococcus* sp. Strain a-1. Toshiaki Yaguchi, Seong Yong Chung, Yasuo Igarashi, and Tohru Kodama ... 348-351

Purification and Properties of Betaine Aldehyde Dehydrogenase from *Xanthomonas translucens*. Nobuhiro Mori, Nobuyuki Yoshida, and Yutaka Kitamoto ... 352-356

Increasing Productivity by Removing Choline in Conversion of Phosphatidylcholine to Phosphatidylserine by Phospholipase D. Lekh Raj Juneja, Eri Taniguchi, Shoichi Shimizu, and Tsuneo Yamane ... 357-361

Anaerobic Oxidation of 1,5-Pentanediol, 2-Butanol, and 2-Propanol by a Newly Isolated Sulfate-Reducer. Kazuhiro Tanaka ... 362-365

Molecular Breeding of a Sake Yeast with a Mutated *ARO4* Gene Which Causes Both Resistance to *o*-Fluoro-DL-Phenylalanine and Increased Production of β-Phenethyl Alcohol. Kazuro Fukuda, Makoto Watanabe, Kozo Asano, Kozo Ouchi, and Seigo Takasawa ... 366-369

Control of Acetate Ester Formation during Alcohol Fermentation with Immobilized Yeast. Sho Shindo, Jun Murakami, and Shohei Koshino ... 370-374

Porous Alumina Beads for Immobilization of Lactic Acid Bacteria and Its Application

for Repeated-Batch Fermentation in Soy Sauce Production. Ken-ichi Iwasaki, Mitsutoshi Nakajima, and Hiroyuki Sasahara 375–379
Elicitation of Sanguinarine Production in Two-Phase Cultures of *Eschscholtzia californica*. Sang Yo Byun, Yeon Woo Ryu, Chul Kim, and Henrik Pedersen 380–385
SCP Production from Steam Exploded Hemicellulose Autohydrolysate by *Trichosporon cutaneum*. Qu Yinbo, Chen Hongzhang, and Gao Peiji 386–389
Treatment of Coffee Waste by Slurry-State Anaerobic Digestion. Kenji Kida, Ikbal, and Yorikazu Sonoda 390–395
Application of an Extended Kalman Filter Method for Monitoring High Density Cultivation of *Escherichia coli*. Albin Ch. Dubach and Herbert Märkl 396–402
Nucleotide Sequence of the Gene Encoding the 45-Kilodalton Subunit of Alcohol Dehydrogenase from *Acetobacter aceti*. Takafumi Inoue, Megumi Sunagawa, Akihiko Mori, Chuhei Imai, Masao Fukuda, Masamichi Takagi, and Keiji Yano 419–424
Purification and Characterization of the Nitrilase from *Alcaligenes faecalis* ATCC 8750 Responsible for Enantioselective Hydrolysis of Mandelonitrile. Keizou Yamamoto, Isao Fujimatsu, and Ken-ichi Komatsu 425–430
Recognition of Size and Charged States of Antigens by Anti-Peptide Antibodies. Yoshinori Sohma, Masanori Atsushi, Hideki Morita, Shigeo Katoh, and Eizo Sada... 431–434
Immunological Agglutination Kinetics of Latex Particles with Covalently Immobilized Antigens. Akihiko Kondo, Takeharu Kawano, and Ko Higashitani 435–439
Production and Partial Properties of an Extracellular Polysaccharide from *Streptomyces* sp. A-1845. Toshiki Inoue, Shigeo Murakawa, and Akira Endo 440–442
Isolation of a Bacterium Assimilating (*R*)-3-Chloro-1,2-Propanediol and Production of (*S*)-3-Chloro-1,2-Propanediol Using Microbial Resolution. Toshio Suzuki, Naoya Kasai, Ryoichi Yamamoto, and Noshi Minamiura 443–448
IM-2, a Butyrolactone Autoregulator, Induces Production of Several Nucleoside Antibiotics in *Streptomyces* sp. FRI-5. Koji Hashimoto, Takuya Nihira, Shohei Sakuda, and Yasuhiro Yamada..... 449–455
Effect of Pitching Yeast and Wort Preparation on Flavor Stability of Beer. Hirotaka Kaneda, Yukinobu Kano, Takatoshi Sekine, Shuichi Ishii, Katsuhisa Takahashi, and Shouhei Koshino 456–460
Adsorption Kinetics and Behaviors of Cellulase Components on Microcrystalline Cellulose. Dong Won Kim, Tae Seung Kim, Young Kyu Jeong, and Jae Kuk Lee... 461–466
Use of Yeast Spores as a Biocatalyst. Toshiko Shigematsu, Akira Kimura, and Kousaku Murata 467–470
Continuous ATP Production by Spinach Thylakoid in a Stirred Tank Reactor. Alex H. C. Yu and Kuniaki Hosono 471–476
Cultivation of Thermophilic Methanogen KN-15 on H_2-CO_2 under Pressurized Conditions. Norihiro Nishimura, Shinko Kitaura, Akio Mimura, and Yoshimasa Takahara 477–480
Nutrient Control by the Gas Evolution in Methanogenesis of Methanol by *Methanosarcina barkeri*. Naomichi Nishio, Toshihide Kakizono, Roberto G. Silveira, Susumu Takemoto and Shiro Nagai 481–485
New Immobilization Method of Mammalian Cells Using Alginate and Polyacrylate. Takashi Mano, Shinjiro Mitsuda, Eitaro Kumazawa, and Yasuyoshi Takeshita..... 486–489
Measurement of Fresh and Dry Densities of Suspended Plant Cells and Estimation of Their Water Content. Hideki Aoyagi, Haruhiko Yokoi, and Hideo Tanaka..... 490–496

NOTES

Nucleotide Sequence of the *LacN* Gene Encoding Thermostable β-Galactosidase of a Thermophilic Anaerobe, Strain NA10. Takao Saito, Katsuya Kato, Tohru Suzuki, Shinji Iijima, and Takeshi Kobayashi 51- 53

Purification and Properties of the Endo-1,4-β-Glucanase III from *Ruminococcus albus*. Yuichi Watanabe, Ryuichi Moriyama, Tsukasa Matsuda, Shoichi Shimizu, and Kunio Ohmiya 54- 57

The Stimulatory Effect of Catalase on the Formation *in vitro* of Ethylene by an Ethylene-Forming Enzyme Purified from *Penicillium digitatum*. Takahira Ogawa, Hiroshi Murakami, Kazuhiro Yamashita, Masato Tazaki, Takao Fujii, and Hideo Fukuda... 58- 60

Distribution of Virginiae Butanolides and IM-2 in the Genus *Streptomyces*. Koji Hashimoto, Takuya Nihira, and Yasuhiro Yamada 61- 65

Effect of Pressure on an Aminoglycoside Fermentation Mediated by Dissolved Oxygen. Vijay Yabannavar, Vijay Singh, and Eugene Schaefer 66- 69

Utilization of KHR Killer as Genetic Marker for Purity Test of Starter Yeast during Fermentation of Grape Musts. Shoji Goto, Kazuyoshi Kitano, and Takashi Shinohara 70- 72

Ethanolic Fermentation by Yeast Cells Immobilized in Polyaldehyde-Hardened Gelatin Beads. De Alteriis Elisabetta, Parascandola Palma, and Scardi Vincenzo 73- 75

Vitamin B_{12} Production by *Acetobacterium* sp. and Its Tetrachloromethane-Resistant Mutants. Koichi Inoue, Sadao Kageyama, Katsuya Miki, Tsuyoshi Morinaga, Yoichi Kamagata, Kazunori Nakamura, and Eiichi Mikami 76- 78

Rapid Enzyme-Linked Immunosorbent Assay with Functional Magnetite Particles. Masashige Shinkai, Jin Wang, Masamichi Kamihira, Masashi Iwata, Hiroyuki Honda, and Takeshi Kobayashi 166-168

Incorporation of n-3 Polyunsaturated Fatty Acids into Phospholipids of a Marine Bacterium *Vibrio* sp. Cultivated with Sardine Oil. Seiichi Ando, Kazuya Nakajima, and Mutsuo Hatano 169-171

Continuous Depolymerization of Alginates by a Non-Support Bioreactor System Containing Flocculated Bacterial Cells. Kousaku Murata, Hisako Yamaguchi, Yoshimasa Yonemoto, Kenji Sakaguchi, Akira Kimura, and Kenichi Okayama 172-174

Oxygen Transfer Rate in Stirred-Tank Fermentors under the Supply of Oxygen-Enriched Air. Yasuhiro Sumino, Koji Sonoi, and Shun-ichi Akiyama 175-177

Cloning of a Gene for Intracellular Alginate Lyase in a Bacterium Isolated from a Ditch. Yoshimasa Yonemoto, Hisako Yamaguchi, Akira Kimura, Kenji Sakaguchi, Kenichi Okayama, and Kousaku Murata 225-227

Adaptation Mechanism of Yeast to Extreme Environments: Construction of Salt-Tolerance Mutants of the Yeast *Saccharomyces cerevisiae*. Keiko Matsutani, Yasuki Fukuda, Kousaku Murata, Akira Kimura, and Norio Yajima 228-229

Purification and Some Properties of a Carboxymethyl Cellulase from *Favolus arcularius*. Shougo Enokibara, Nobuhiro Mori, and Yutaka Kitamoto 230-232

Collagenolytic Activity of a New Semi-Alkaline Protease from *Aspergillus niger*. Chantal Barthomeuf, Henri Pourrat, and Aimée Pourrat 233-236

Syntheses of Glucosides with Trimethylolpropane and Two Related Polyol Moieties by Cyclodextrin Glucanotransferase and Their Esterification by Lipase. Hirofumi Nakano, Sumio Kitahata, Yoshio Tominaga, Yumi Kiku, Kenshi Ando, Yuji Kawashima, and Shigeyuki Takenishi 237-238

Enhancement of Enzymatic Production of Cyclodextrins by Adding Polyethylene Glycol or Polypropylene Glycol. Kazuhiko Hayashida and Koei Kawakami 239-240

The Use of Commercial Enzymes in White Grape Juice Clarification. Hassan K. Sreenath and Krishnaswamy Santhanam 241-243
Efficient Hydrogen Production from Starch by a Bacterium Isolated from Termites. Fumiaki Taguchi, Jun Dan Chang, Shuya Takiguchi, and Masayoshi Morimoto ... 244-245
Production of 3-Hydroxybutyric Acid Trimer by *Bacillus megaterium* B-124. Nobuo Kato, Hisatoshi Konishi, Masayuki Shimao, and Chikahiro Sakazawa..... 246-247
High Concentration Culture of *Bacillus subtilis spo*⁻ Mutant Strain Carrying a Recombinant Plasmid. Kenichi Kai, Yong Soo Park, Shinji Iijima, and Takeshi Kobayashi... 248-250
Effect of Operational Conditions on the Rate of Citric Acid Production by Rotating Disk Contactor Using *Aspergillus niger*. Akihiko Sakurai and Hiroshi Imai 251-254
Nucleotide Sequence of an Endo-1,4-β-Glucanase Gene (*celA*) from *Clostridium josui*. Tsuchiyoshi Fujino and Kunio Ohmiya 308-313
Expression of a Plasmid-Encoded Gene for Cadmium Resistance of *Pseudomonas putida* GAM-1 in *Escherichia coli*. Keiichi Kawai, Hiroyuki Horitsu, Kazuhiro Hamada, Masayoshi Itoh, Tohru Suzuki, and Kazuhiro Takamizawa 314-316
Optimization of the Microbial Production of a Protein (SSI) Using an Indicator Host-Vector System. Seiichi Taguchi, Keisuke Furukawa, Haruo Momose, and Michimasa Kishimoto 317-318
Optimization of Critical Parameters for Immobilization of Yeast Cells to Alginate Gel Matrix. Rajagopalan Jamuna, Pillutla Sesha Talpa Sai, Sonal Vora, and Sonti Venkata Ramakrishna..... 319-322
The Importance of the Surface Charge on Support Media for Microbial Adhesion. Kenji Kida, Shigeru Morimura, Yorikazu Sonoda, and Toshinobu Yanoh..... 323-325
Optimal Culture Conditions of *Bacillus stearothermophilus* JTS 859 for the Production of a Thermostable Enzyme to Synthesize 5-Methyluridine. Nobuaki Hori, Mutsumi Watanabe, Kenji Sunagawa, Kyouko Uehara, and Yoichi Mikami 326-328
Propionate Formation from Alcohols or Aldehydes by *Desulfobulbus propionicus* in the Absence of Sulfate. Masaharu Tasaki, Yoichi Kamagata, Kazunori Nakamura, and Eiichi Mikami 329-331
Operation Conditions for Anaerobic Treatment of Wastewater from a Beer Brewery. Kouhei Tanemura, Kenji Kida, Kimikazu Iwasaki, and Yorikazu Sonoda 332-335
Substrate Specificity and Positional Preference of a Lipoprotein Lipase. Azadeh Kheirolomoom, Ken-ichi Yoshida, Shigeo Katoh, and Eizo Sada 403-404
Effect of Amino Acid Substitutions at the Active Center on the Activity of *Bacillus stearothermophilus* Alcohol Dehydrogenase. Hisao Sakoda and Tadayuki Imanaka..... 405-407
Function of Glycolytic Bypass and *S*-Lactoylglutathione in Sporulation of Yeast Cells. Toshiko Shigematsu, Akira Kimura, and Kousaku Murata..... 408-411
Lipase Production by *Trichosporon fermentans* WU-C12, a Newly Isolated Yeast. Jiacong Chen, Takashi Ishii, Susumu Shimura, Kohtaro Kirimura, and Shoji Usami..... 412-414
Characteristics of *Koji* Prepared from the Transformant of *Aspergillus oryzae* with the Glucoamylase Gene of *Aspergillus shirousamii*, and Its Utilization for Sake-Brewing. Ichiro Shibuya, Gakuzo Tamura, Etsuo Goto, Takeaki Ishikawa, and Shodo Hara 415-417
Breeding of a Useful Strain of Sake Yeast for *Ginjo*-Sake Brewing. Dai Hirata, Shigeru Aoki, Ken-ichi Watanabe, Mototsugu Tsukioka, and Tsuneo Suzuki 497-499
Anaerobic Degradation of D-Malate by a Newly Isolated Sigmoid Bacterium. Kazuhiro Tanaka 500-502
Anaerobic Oxidation of Isobutyl Alcohol, 1-Pentanol, and 2-Methoxyethanol by *Desulfovibrio vulgaris* Strain Marburg. Kazuhiro Tanaka..... 503-504